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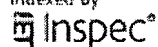
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Nils-Gunnar Holmer;
[Biomedical Engineering, IEEE Transactions on](#)
Volume BME-21, Issue 4, July 1974 Page(s):329 - 333
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Kuskibiki, J.; Akashi, N.; Sannomiya, T.; Chubachi, N.; Dunn, F.;
[Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on](#)
Volume 42, Issue 6, Nov. 1995 Page(s):1028 - 1039
Digital Object Identifier 10.1109/58.476547
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Rhyne, T.L.;
[Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on](#)
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Mannelli, I.; Minunni, M.; Tombelli, S.; Mascini, M.;
[Sensors Journal, IEEE](#)
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Digital Object Identifier 10.1109/JSEN.2003.815793

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6. **LF low-noise amplifiers for high-impedance capacitive sources**

Davis, J.; Angell, J.; Shockl y, W.;
[Solid-State Circuits Conference. Digest of Technical Papers. 1974 IEEE Intern](#)
Volume XVII, Feb 1974 Page(s):122 - 123

[AbstractPlus](#) | Full Text: [PDF\(344 KB\)](#) IEEE CNF
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7. **A micro ultrasonic scalpel with sensing function**

Nagoya, T.; Kurosawa, M.K.;
[Ultrasonics, 2003 IEEE Symposium on](#)
Volume 1, 5-8 Oct. 2003 Page(s):1070 - 1073 Vol.1
Digital Object Identifier 10.1109/ULTSYM.2003.1293585

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8. **A monopole ultrasonic pulse generator using PVDF piezoelectric film**

Zheng, F.; Zhang, Y.; Xia, Z.;
[Electrets, 2002. ISE 11. Proceedings. 11th International Symposium on](#)
1-3 Oct. 2002 Page(s):330 - 333
Digital Object Identifier 10.1109/ISE.2002.1043010

[AbstractPlus](#) | Full Text: [PDF\(381 KB\)](#) IEEE CNF
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9. **Performance of hydrothermal PZT film on high intensity operation**

Kurosawa, M.K.; Yasui, H.; Kanda, T.; Higuchi, T.;
[Micro Electro Mechanical Systems, 2000. MEMS 2000. The Thirteenth Annual](#)
[Conference on](#)
23-27 Jan. 2000 Page(s):56 - 61
Digital Object Identifier 10.1109/MEMSYS.2000.838490

[AbstractPlus](#) | Full Text: [PDF\(508 KB\)](#) IEEE CNF
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10. **Experimental validation of analytical models of flexible structures with bi piezoelectric film actuators and sensors**

Vaz, A.F.; Farr, T.J.;
[Instrumentation and Measurement Technology Conference, 1997. IMTC/97. P](#)
['Sensing, Processing, Networking'. IEEE](#)
Volume 2, 19-21 May 1997 Page(s):887 - 892 vol.2
Digital Object Identifier 10.1109/IMTC.1997.610244

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11. **Algorithm for reduction of mechanical noise in arterial pulse recording w**

Ciaccio, E.J.; Drzewiecki, G.M.; Karam, E.H.;
[Bioengineering Conference, 1989., Proceedings of the 1989 Fifteenth Annual I](#)
27-28 March 1989 Page(s):161 - 162
Digital Object Identifier 10.1109/NEBC.1989.36750

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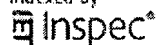
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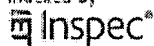
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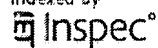
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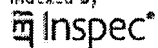
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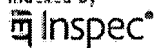
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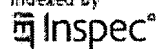
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